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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,101	03/24/2004	Danny Keith Chapman	2003-0828.02/4670-268	4165

7590 09/28/2006
LEXMARK INTERNATIONAL, INC.
ATT: JOHN J. McARDLE, JR.
740 WEST NEW CIRCLE ROAD
LEXINGTON, KY 40550

EXAMINER

GLASS, ERICK DAVID

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,101

Applicant(s)

CHAPMAN ET AL.

Examiner

Erick Glass

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,16-19,23-25,27 and 43 is/are rejected.
- 7) ☒ Claim(s) 3,5-15,20-22,26,28-42 and 44-48 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/6/05 + 6/08/04</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 16-19, 23-25, 27, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa (US 4,459,525).

With respect to claim 1, Hasegawa discloses commutating the motor under open-loop control based (column 3, lines 9-35) on energizing its windings according to a stored commutation table (column 1, table 1) whose table entries define sequential commutation states for the windings; and controlling motor speed by setting a selection rate for sequentially selecting the table entries.

With respect to claim 2, Hasegawa discloses selecting one of the table entries as a commutation starting point based on positional feedback (fig. 3, 30) from the motor.

With respect to claim 4, Hasegawa discloses transitioning from a closed-loop control method (column 1, lines 33-35) based on motor feedback to the open-loop control method based on the stored commutation table as a function of the motor speed.

With respect to claim 16, Hasegawa discloses driving an image forming subassembly of the image forming apparatus (column 1, line 7) with a brushless dc motor (fig. 3, 10); and controlling the motor based on open-loop commutation (column 3,

lines 9-35) comprising commutating the motor by energizing its windings according to a stored commutation table (column 1, table 1) whose table entries define sequential commutation states for the windings, and controlling motor speed by setting a selection rate for sequentially selecting the table entries.

With respect to claim 17, Hasegawa discloses controlling the motor based on open-loop commutation comprises determining a starting table entry (column 1, lines 33-35) in the stored commutation table based on a motor feedback signal that indicates motor position.

With respect to claim 18, Hasegawa discloses controlling the motor based on closed-loop commutation (column 1, lines 33-35) in a first mode, and controlling the motor based on the open-loop commutation (column 3, lines 9-35) in a second mode, wherein controlling the motor based on closed-loop commutation comprises commutating the motor under closed-loop control responsive to one or more motor feedback signals (fig. 3, 30).

With respect to claim 19, Hasegawa discloses starting the motor in the first mode and transitioning (column 1, lines 31-35) to the second mode.

With respect to claim 23, Hasegawa discloses a logic circuit (fig. 3) configured to obtain sequential commutation states for the motor from a stored commutation table (column 1, table 1) whose table entries define sequential commutation states for the windings of the motor; and an output circuit (fig. 3, 48) configured to output commutation signals for commutating motor according to the sequential commutation states; said

logic circuit further configured to control motor speed by setting a selection rate for sequentially selecting table entries.

With respect to claim 24, Hasegawa discloses to select one of the table entries as a commutation starting point based on positional feedback (fig. 3, 30) from the motor.

With respect to claim 25, Hasegawa discloses an input circuit (fig. 3, 30, 38, 50, 44, 46) configured to receive a feedback signal providing the positional feedback from the motor.

With respect to claim 27, Hasegawa discloses wherein the motor control circuit is configured to control the motor under closed-loop control (column 1, lines 33-35) based on motor feedback in a first mode of operation, and configured to control the motor under open-loop control (column 3, lines 9-35) based on the stored commutation table in a second mode of operation.

With respect to claim 43, Hasegawa discloses a printer subassembly (column 1, line 7) used in an image forming process of the image forming apparatus; a brushless dc motor (fig. 3, 10) configured to drive the printer subassembly; and a motor control circuit (fig. 3) configured to commutate the motor under open-loop control (column 3, lines 9-35) based on energizing its windings according to a stored commutation table (column 1, table 1) whose table entries define sequential commutation states for the windings; said motor control circuit configured to control motor speed by setting a selection rate for sequentially selecting table entries.

Allowable Subject Matter

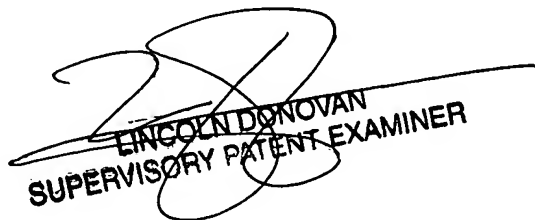
Claims 3, 5-15, 20-22, 26, 28-42, and 44-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Glass whose telephone number is 571-272-8395. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EG


LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER